STRAIT OF JUAN DE FUCA – DUNGENESS CHINOOK

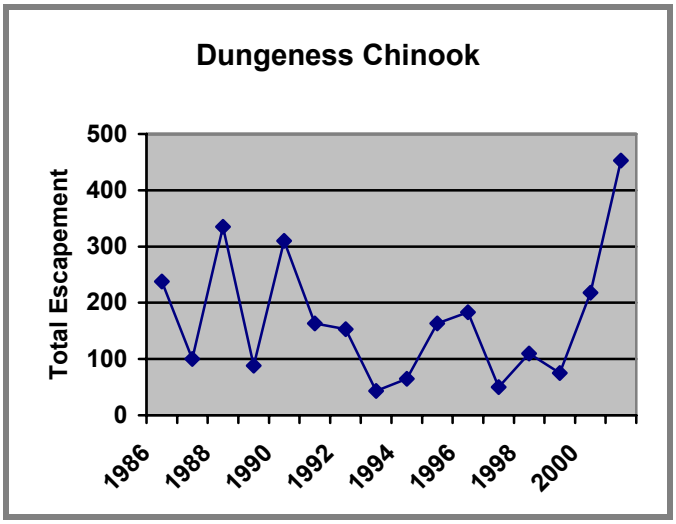
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Excellent

YEAR	TOTAL ESCAPEMENT
1986	238
1987	100
1988	335
1989	88
1990	310
1991	163
1992	153
1993	43
1994	65
1995	163
1996	183
1997	50
1998	110
1999	75
2000	218
2001	453



Data are total escapement estimates expanded from redd counts from RM 0.0 to 18.7 in the Dungeness River and from RM 0.0 to 5.1 in the Gray Wolf River.

Stock status continues to be rated **Critical** in 2002 due to **chronically low** escapements that are well below the escapement goal of 925 adults. The increased escapement in 2001 may be the result, in part, of ongoing hatchery supplementation efforts.

[Stock status continues to be rated **Critical** in 2002 due primarily to low escapement. The average number of spawners for brood years 1988 through 1997 is 156, which is less than the Comprehensive Chinook low abundance threshold for the stock of 500 spawners (PSIT and WDFW 2001). In addition, stock productivity is low, even assuming low marine survival, but is not in the critical range.]

STOCK DEFINITION

Dungeness chinook were identified as a stock based on their distinct spawning distribution and timing. Stock identification is supported by genetic analysis.

SPAWNING DISTRIBUTION: Most spawning takes place from the mouth to RM 18.9 in the mainstem Dungeness and the lower 6.1 miles of the Gray Wolf River.

SPAWNING TIMING: Spawning generally occurs from mid-August to mid-October. Spawning begins about two weeks earlier in the upper portions of the river than in the lower portion.

STRAIT OF JUAN DE FUCA – DUNGENESS CHINOOK

GENETIC ANALYSIS: Allozyme analysis to examine family contributions to a state-tribal hatchery-based supplementation program for Dungeness has been conducted. No examination of the relationship between Dungeness chinook and other chinook stocks has been made (Anne Marshall, WDFW, personal communication).

STOCK ORIGIN

This is a **native** stock with **composite** production. A joint state-tribal hatchery-based supplementation program for Dungeness chinook began in 1992 and is carried out at the WDFW Dungeness and Hurd Creek hatcheries.

STRAIT OF JUAN DE FUCA – ELWHA CHINOOK

In the 1992 this stock was called the Elwha/Morse Creek summer/fall chinook stock. In this revision, Morse Creek has been dropped from the stock name because we believe that chinook spawning in Morse Creek are strays from the Elwha River. Run-timing designations (e.g. "summer/fall") have been dropped from most Puget Sound chinook stock names because they have been applied inconsistently.

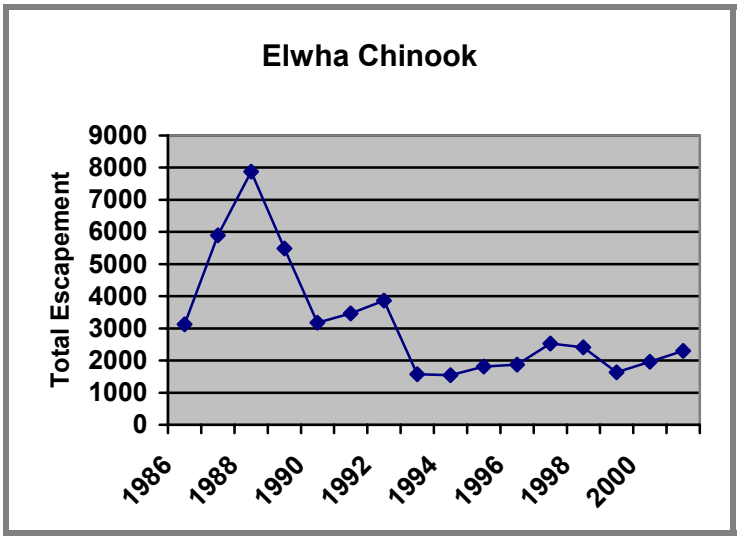
Stock Status

1992 Status	2002 Status
Healthy	Depressed

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1986	3,127
1987	5,893
1988	7,873
1989	5,487
1990	3,180
1991	3,469
1992	3,859
1993	1,569
1994	1,546
1995	1,812
1996	1,875
1997	2,524
1998	2,409
1999	1,602
2000	1,851
2001	2,208



Data are total escapement estimates based on redd counts from RM 0.2 to 4.8. Status is now rated **Depressed** due to a **long-term negative trend** and **chronically low** escapements since 1992. Spawning abundance has fallen to levels below the escapement goal of 2,900 adults, and it is evident that the hatchery program is essential for maintenance of the stock at its current low level.

Stock Definition

Elwha chinook were identified as a stock based on their distinct spawning distribution. Stock identification is supported by genetic analysis.

Spawning Distribution: Spawning is limited to the lower 4.8 miles of river below the Elwha Dam.

Spawning Timing: Spawning generally occurs from late August through mid-October.

Genetic Analysis: Allozyme analysis has shown that Elwha chinook are genetically distinct from all other Washington chinook stocks examined (Marshall et al. 1995).

STRAIT OF JUAN DE FUCA – ELWHA CHINOOK

Stock Origin

This is a **native** stock with **composite** production. The WDFW Elwha Hatchery collects broodstock from the Elwha River annually. The wild and hatchery components are completely intermingled.

STRAIT OF JUAN DE FUCA – HOKO FALL CHINOOK

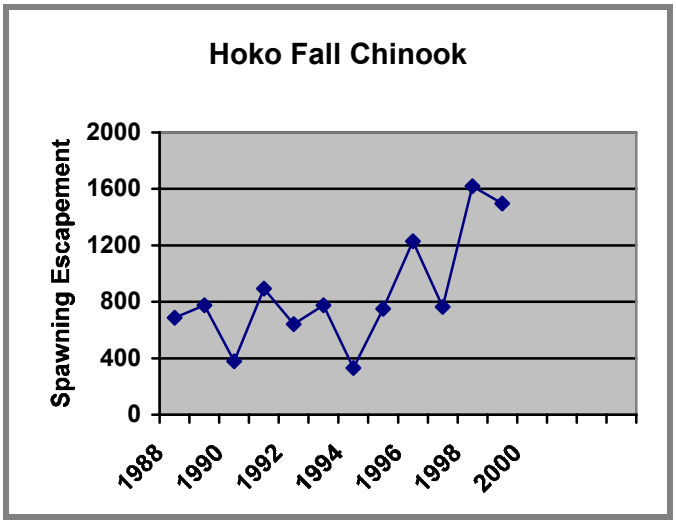
STOCK STATUS

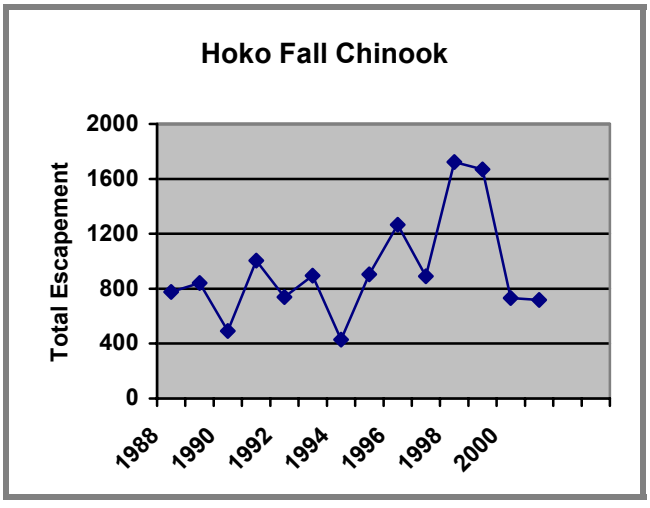
1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Very Good

YEAR	SPAWNING ESCAPEMENT	BROODSTOCK REMOVALS	TOTAL ESCAPEMENT
1988	686	90	776
1989	775	67	842
1990	378	115	493
1991	894	112	1,005
1992	642	98	740
1993	775	119	894
1994	332	96	428
1995	750	155	905
1996	1,228	37	1,265
1997	765	126	891
1998	1,618	104	1,722
1999	1,497	191	1,688
2000	612	119	731
2001	768	178	946





Data are: 1) estimates of the number of spawners after up to100 pairs of chinook are removed for broodstock for the Makah Tribe's Hoko chinook rebuilding program, 2) numbers of chinook actually removed for broodstock, and 3) total run escapement (spawners plus broodstock).

Spawner estimates are expanded from redd counts in the upper and lower mainstem Hoko; the little Hoko River, a tributary to the lower Hoko; Herman, North Fork Herman, Ellis Bear, Cub and Brownes creeks, all tributaries to the upper Hoko river

Numbers of natural chinook spawners have significantly increased since the inception of the Hoko Falls Hatchery supplementation program in 1982, from counts of less than 200, before hatchery supplementation was initiated, to exceeding the natural escapement goal of 850 in three out of the last six years (1996 to 2001). Despite these recent successes and the increasing trend in run size, the numbers of

chinook remaining in the river to spawn after brood stock removal have exceeded the spawning escapement goal of 850 natural spawners in only four years since 1988. While natural-origin recruits and the overall run size have shown increasing trends in abundance since the early 1980s, the proportion of natural-origin spawners relative to the proportion of hatchery-origin spawners has declined in recent years.

Stock status is rated **Depressed** in 2002, due to **chronically low** escapements and the poor replacement rate of natural-origin recruits. Although the overall trend may be increasing, natural production has not provided any significant surplus out of most brood years to guard against natural downturns in survival, predation, or other sources of mortality including fishery-related mortality. However, the overall increasing trend in natural-origin recruits and the recent escapements that have often exceeded the goal of 850 spawners suggest that the viability of this stock may be gradually increasing. Three of the six most recent years have exceeded 1,200 river spawners, and the terminal run size has exceeded 850 chinook in five out of the most recent six years. Total returns to the river have exceeded 850 chinook more often than not since 1988.

Stock Definition

Hoko chinook were identified as a stock based on their distinct spawning distribution. Stock identification has been supported by genetic analysis.

Spawning Distribution: Most spawning takes place in the mainstem up to about RM 21.5, in the little Hoko River, a tributary to the lower Hoko mainstem and in Herman, Ellis, Bear, Cub and Brownes creeks, upper Hoko mainstem tributaries.

Spawning Timing: Spawning generally begins in late September and extends through late November.

Genetic Analysis: Allozyme analysis has shown that Hoko chinook are genetically distinct from all other Washington chinook stocks examined, although they share some allele frequency similarities with north coastal stocks (Marshall et al. 1995).

Stock Origin

This is a **native** stock with **composite** production. The Makah Tribe is conducting a hatchery-supplementation program that uses native broodstock to rebuild the stock.

STRAIT OF JUAN DE FUCA– CHIMACUM CREEK SUMMER CHUM

This stock was not identified in the 1992 SASSI.

STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	**Extinct**

STOCK STATUS RATING DATA

No long-term standardized escapement surveys were conducted for Chimacum Creek summer chum. Surveys done as part of a Chimacum High School project during the middle 1970s and early 1980s and incidental WDFW surveys indicated that summer-timed chum were present until the mid-1980s.

Summer chum began to return to Chimacum Creek in 1999 as a result of a reintroduction program originally conceived by Wild Olympic Salmon, a private non-profit salmon enhancement group on the Olympic Peninsula. This program began in 1996 and is using broodstock from the Snow/Salmon creeks summer chum stock. Total escapements were 38, 52, and 903 summer chum in 1999, 2000 and 2001, respectively.

Stock status continues to be rated **Extinct** because it is not yet known whether a naturally producing population is established in the stream.

STOCK DEFINITION

Chimacum Creek summer chum were recognized as a separate stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning occurs in the lower two miles of Chimacum Creek.

SPAWNING TIMING: Spawning generally occurs from mid-September through mid-October.

GENETIC ANALYSIS: No genetic sampling was conducted prior to the loss of the native stock.

STOCK ORIGIN

This original stock was **native** with **wild** production. The introduced stock is **non-native** with **cultured** production since it originated from the Snow/Salmon stock and has been supported by hatchery production beginning in 1996. The present population is considered a range extension of the Snow/Salmon creeks summer chum stock.

STRAIT OF JUAN DE FUCA– SNOW/SALMON CREEKS SUMMER CHUM

Snow/Salmon creeks summer chum were called Discovery Bay summer chum in the 1992 SASSI.

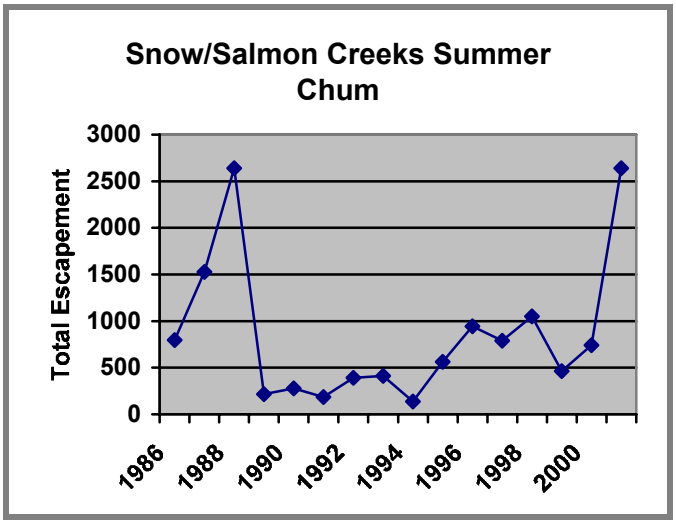
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	795
1987	1,527
1988	2,638
1989	215
1990	278
1991	184
1992	454
1993	463
1994	163
1995	616
1996	1,054
1997	901
1998	1,171
1999	528
2000	876
2001	2,792



Data are total escapement estimates based on Salmon Creek rack counts and live spawner counts from RM 0.0 to RM 1.5 and Snow Creek rack counts and live spawner counts from RM 0.0 to RM 0.8.

Snow/Salmon creeks summer chum have experienced increased escapements since 1995, in part because of a successful cooperative hatchery supplementation program originally conceived by Wild Olympic Salmon and supported by the North Olympic Salmon Coalition (WDFW and PNPTT 2001). The improvement in escapement has moved the stock out of Critical status, however, the stock is rated **Depressed** in 2002 because of continuing **chronically low** escapements of naturally produced adults.

STOCK DEFINITION

Snow/Salmon creeks summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early return and spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of Salmon Creek and in the lower 1.5 miles of Snow Creek.

STRAIT OF JUAN DE FUCA– SNOW/SALMON CREEKS SUMMER CHUM

SPAWNING TIMING: Spawning generally occurs from early September through mid-October.

GENETIC ANALYSIS: Allozyme analysis has shown that Snow/Salmon creeks summer chum are genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **composite** production. In 1992, a cooperative hatchery supplementation program was begun on Salmon Creek using naturally returning Salmon Creek summer chum as broodstock. Adult summer chum produced in the program began to return in 1995 and have contributed to the production of this stock

STRAIT OF JUAN DE FUCA – JIMMYCOMELATELY CREEK SUMMER CHUM

Jimmycomelately Creek summer chum were called Sequim Bay summer chum in 1992.

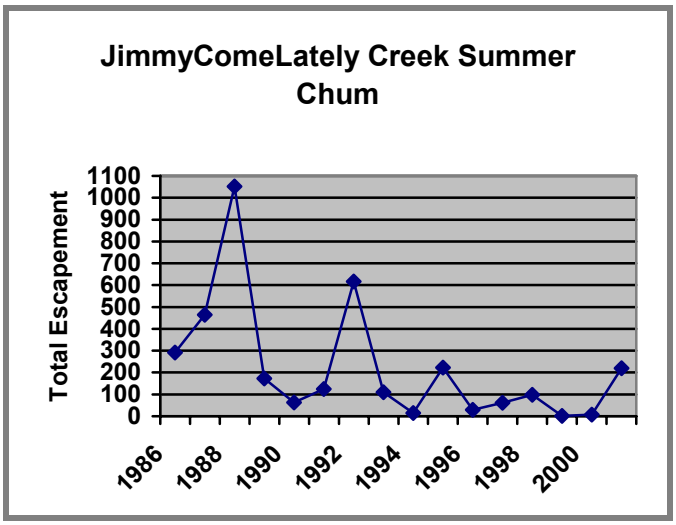
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	292
1987	464
1988	1,052
1989	173
1990	63
1991	125
1992	616
1993	110
1994	15
1995	223
1996	30
1997	61
1998	98
1999	1
2000	9
2001	219



Data through 1998 are total escapement estimates based on live spawners counted from RM 0.0 to 1.5. Beginning in 1999, an adult trap was used to enumerate the stock and to collect broodstock.

JimmyComeLately Creek summer chum are rated **Critical** in 2002 because of **short-term severe decline** in escapements in 1999 and 2000 and because of **chronically low** escapements. A recovery program that includes hatchery supplementation and habitat improvement actions was begun in 1999.

STOCK DEFINITION

JimmyComeLately Creek summer chum were recognized as a stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the lower half-mile of JimmyComeLately Creek.

SPAWNING TIMING: Spawning generally occurs from early September through mid-October.

STRAIT OF JUAN DE FUCA – JIMMYCOMELATELY CREEK SUMMER CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that JimmyComeLately Creek summer chum are genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **composite** production. In 1999, a cooperative hatchery supplementation program was begun using naturally returning JimmyComeLately summer chum as broodstock. Adult summer chum produced in the program are expected to return beginning in 2002 and to contribute to the production of this stock

STRAIT OF JUAN DE FUCA– DUNGENESS SUMMER CHUM

The Dungeness summer chum stock was not identified as a stock in the 1992 SASSI and was not rated.

Stock Status

1992 Status	2002 Status
Not rated	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Dungeness summer chum, so their status is **Unknown** in 2002. Summer-timed chum are observed in the Dungeness River during spawner surveys for chinook and pink salmon. The numbers of fish seen are so low that they may not represent a self-sustaining stock but could be strays from other stocks. There are no data prior to 1980 that indicate the presence of a summer chum stock in the Dungeness River.

Stock Definition

Dungeness summer chum were recognized as a separate stock in the state-tribal summer chum recovery plan (WDFW and PNPTT 2000) based on their distinct spawning distribution and early spawning timing.

Spawning Distribution: Most spawning takes place in the lower Dungeness River, however, summer chum have been seen upstream as far as the WDFW Dungeness Hatchery (RM 10.5)

Spawning Timing: Spawning generally occurs in September and October.

Genetic Analysis: No genetic analysis has been done on Dungeness summer chum.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA– DUNGENESS/EAST STRAIT TRIBS FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data available for the Dungeness/East Strait Tribs fall chum stock, so their status remains **Unknown** in 2002. The highest one-day live+dead counts in a one-mile section of Beebe Creek are available beginning in 1997. They are: 1997—303, 1998—1,025, 1999—691, 2000—265 and 2001—1,062

Stock Definition

Dungeness/East Strait Tribs fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the lower Dungeness and in a small channel, locally known as Beebe Creek, that drains into Matriotti Creek (a lower Dungeness tributary). There have been reports of chum spawning in nearby independent tributaries including McDonald, Siebert, Bagley and Morse creeks.

Spawning Timing: Spawning occurs from mid-November through December.

Genetic Analysis: No genetic analysis has been done on Dungeness/East Strait Tribs fall chum.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA– ELWHA FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Elwha fall chum, so their status remains **Unknown** in 2002.

Stock Definition

Elwha fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the lower mile of the Elwha River.

Spawning Timing: Spawning generally occurs from mid-November through December.

Genetic Analysis: Allozyme analysis has shown that Elwha fall chum resemble Quilcene late fall chum.

Stock Origin

This is a **native** stock with **wild** production. The Elwha Tribe's hatchery had a chum program (circa 1980) that used primarily Hood Canal (Walcott Slough, near the Quilcene River) fish and some native Elwha and Lyre fall chum.

STRAIT OF JUAN DE FUCA – LYRE FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Lyre fall chum, so their status remains **Unknown** in 2002. Typically, visibility is very poor during the chum spawning season, and counts cannot be made with any accuracy.

Stock Definition

Lyre fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place mainly in the lower 2.5 miles of the Lyre River.

Spawning Timing: Spawning generally occurs from mid-November to mid-January.

Genetic Analysis: Allozyme analysis has shown that Lyre fall chum are genetically distinct from all other Washington chum stocks examined.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA– DEEP CREEK/EAST & WEST TWIN FALL CHUM

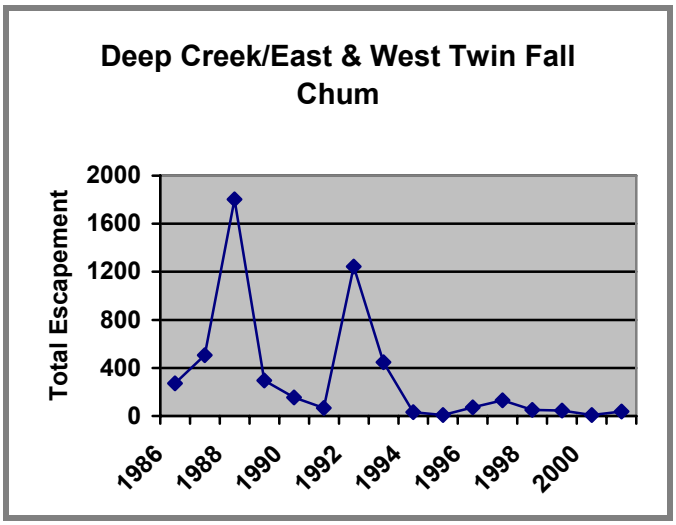
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	271
1987	505
1988	1,804
1989	295
1990	155
1991	66
1992	1,243
1993	448
1994	32
1995	7
1996	73
1997	131
1998	50
1999	45
2000	8
2001	37



Data are total escapement estimates based on counts of live plus dead spawners in Deep Creek from RM 0.2 to 2.5. High flows and turbidity make consistent survey effort difficult in November and December.

Escapements for Deep Creek/East & West Twin fall chum increased substantially from the 1980s through the early 1990s. Escapements have been very poor following a catastrophic slope failure in the Deep Creek drainage in 1994. Stock status is **Depressed** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Deep Creek/East & West Twin fall chum were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in lower Deep Creek.

SPAWNING TIMING: Spawning generally occurs from mid-November through December.

STRAIT OF JUAN DE FUCA– DEEP CREEK/EAST & WEST TWIN FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that Deep Creek/East & West Twin fall chum are genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – PYSHT FALL CHUM

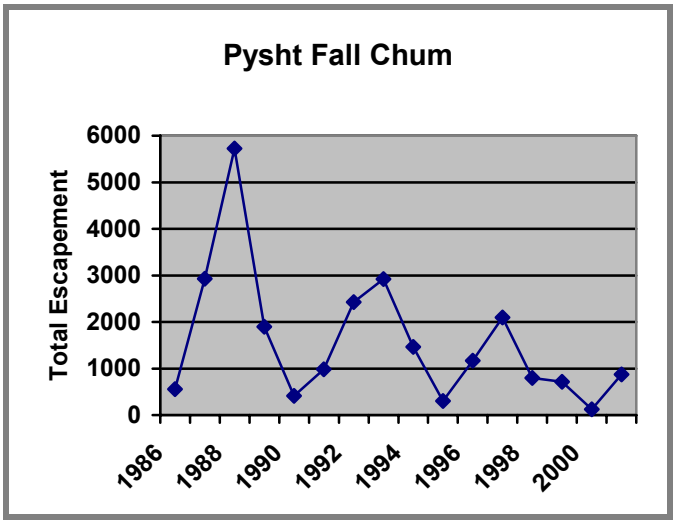
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	559
1987	2,930
1988	5,726
1989	1,896
1990	412
1991	985
1992	2,428
1993	2,918
1994	1,462
1995	303
1996	1,167
1997	2,094
1998	800
1999	718
2000	123
2001	874



Data are total escapement estimates based on live plus dead spawner counts in the mainstem Pysht from RM 8.5 to 11.0. High flows and turbidity make consistent survey difficult in November and December.

Pysht fall chum escapements have displayed a general increase since the early 1980s with a very large escapement of 5726 spawners in 1988. In 2000, a low escapement of only 123 spawners occurred, but a number of past escapements have been of similar magnitude. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Pysht fall chum were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place from RM 6.0 to 12.0 of the mainstem Pysht River.

SPAWNING TIMING: Spawning generally occurs from mid-November through December.

GENETIC ANALYSIS: Allozyme analysis has shown that Pysht fall chum are genetically distinct from all other Washington chum stocks examined.

STRAIT OF JUAN DE FUCA – PYSHT FALL CHUM

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – HOKO/CLALLAM/SEKIU FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Hoko/Clallam/Sekiu fall chum, so their status remains **Unknown** in 2002.

Stock Definition

Hoko/Clallam/Sekiu fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the lower eight miles of the Hoko River. Spawning chum have been recorded in the Clallam River and are thought to utilize the Sekiu River as well.

Spawning Timing: Spawning generally occurs from mid-November through December.

Genetic Analysis: No genetic analysis has been done on Hoko/Clallam/Sekiu fall chum.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA - CHIMACUM CREEK COHO

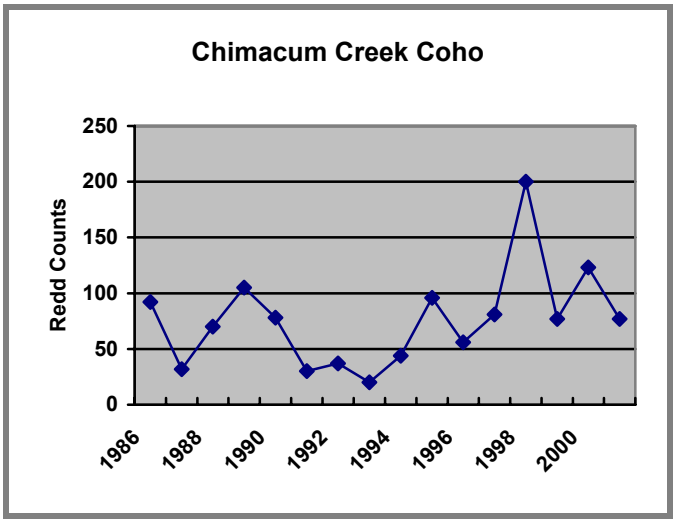
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

BROOD YEAR	REDD COUNTS	TOTAL ESCAPEMENT
1986	92	
1987	32	
1988	70	
1989	105	
1990	78	
1991	30	
1992	37	
1993	20	
1994	44	
1995	96	
1996	56	
1997	81	
1998	200	550
1999	77	711
2000	123	1,054
2001	77	



Data are 1): cumulative redd counts in the Chimacum Creek index area (RM 8.3 to 10.2) from 1986 to 1999 and from index area RM 8.8 to 10.2 in 2000 and 2001and 2) total escapement estimates based on redd counts and using a stratified random survey methodology (Crain 1999).

This stock is rated **Healthy** in 2002 due to an increasing trend in redd counts in the mid-to-late 1990s. This rating is provisional, as there are concerns that the index data may represent only better-quality coho spawning habitat and may not be representative of the total basin (Thom Johnson, WDFW, personal communication). Spawning may be limited outside the survey area because good spawning habitat is limited.

STOCK DEFINITION

Chimacum Creek coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Chimacum Creek system.

SPAWNING TIMING: Spawning generally occurs from November through late January with periodic large spawning peaks in January.

STRAIT OF JUAN DE FUCA - CHIMACUM CREEK COHO

GENETIC ANALYSIS: No genetic analysis of coho from the Chimacum Creek system has been done.

STOCK ORIGIN

This is a **mixed** stock with **composite** production. There have been significant off-station coho releases into the Chimacum Creek system since 1960. Yearlings from Dungeness Hatchery were planted from 1960 to 1981; Soos Creek Hatchery (Green River) yearlings were planted in 1964; Minter Creek Hatchery (south Puget Sound) coho were released in 1976; and Quilcene Hatchery coho were used in 1977. This stock is likely a mixture of the native and introduced non-native stocks.

STRAIT OF JUAN DE FUCA - DISCOVERY BAY COHO

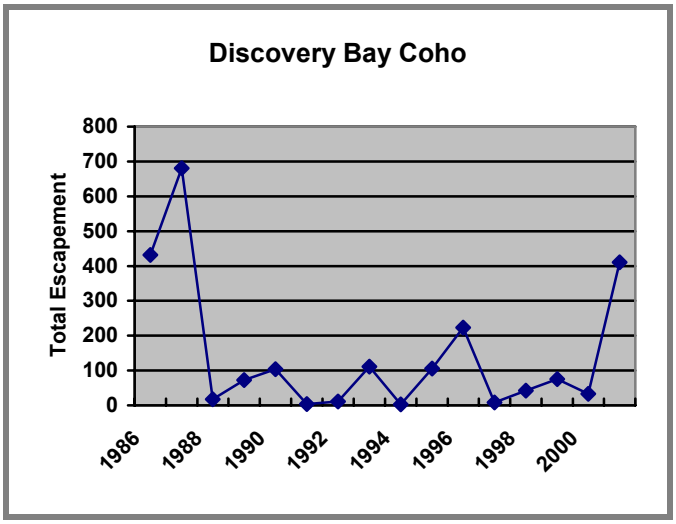
STOCK STATUS

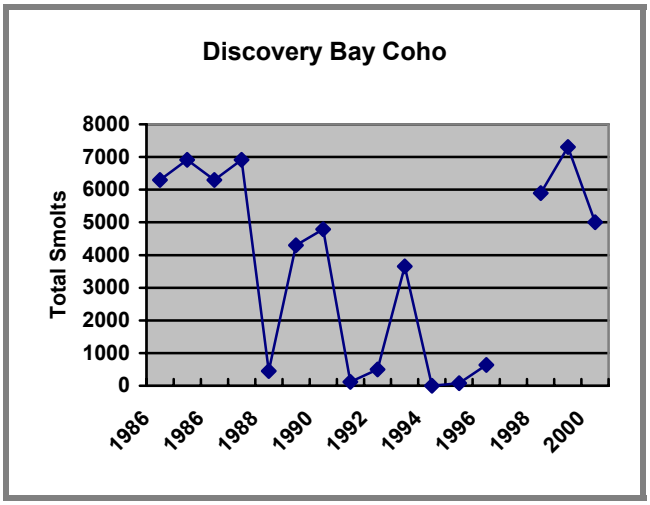
1992 STATUS	2002 STATUS
Critical	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	TOTAL ESCAPEMENT	TOTAL SMOLTS
1986	432	6,296
1987	681	6,915
1988	17	448
1989	73	4,300
1990	104	4,787
1991	4	117
1992	11	495
1993	111	3,657
1994	3	3
1995	106	783
1996	223	632
1997	8	No data
1998	42	5,897
1999	75	7,302
2000	33	~5,000
2001	411	





Data are total adult escapement estimates and smolt numbers based on counts at the WDFW Snow Creek Research Station upstream/downstream migrant trap at RM 0.8.

Since 1994 adult escapement and juvenile production levels have been very low. A formal recovery program was initiated in 1998, using Snow Creek coho as the donor stock for a supplementation program. In 1998 through 2000, nearly all returning natural-origin coho adults (25 to 30 pairs each year) were collected and spawned at the Snow Creek facility.

Juvenile releases from the supplementation program resulted in a significant increase in total coho smolt production for the 1998,1999 and 2000 brood years. The escapement in 2001 was over 400 coho adults, which represents the first adult returns from the supplementation program. About 30 pairs were collected for broodstock in 2001, and the rest were allowed to spawn naturally.

STRAIT OF JUAN DE FUCA - DISCOVERY BAY COHO

Initial results of the recovery program are encouraging, but it will take several more years to see if the coho population can become self-sustaining. The status of the stock remains **Critical** in 2002 because of **chronically low** escapements.

Stock Definition

Discovery Bay coho were identified as a stock based on their distinct spawning ground distribution.

Spawning Distribution: Most spawning takes place in the Snow Creek and Salmon Creek watersheds. Some spawning also takes place in the lower portions of Contractors and Eagle creeks.

Spawning Timing: Spawning generally occurs from late October to early January.

Genetic Analysis: No genetic analysis has been done on Discovery Bay coho, but samples have been collected for DNA analysis.

Stock Origin

This is a **mixed** stock with **composite** production. Relatively small numbers of Dungeness Hatchery-origin coho were released into Discovery Bay tributaries beginning in 1965. This stock is likely a mixture of the native stock and non-native stocks introduced into these drainages.

STRAIT OF JUAN DE FUCA - SEQUIM BAY COHO

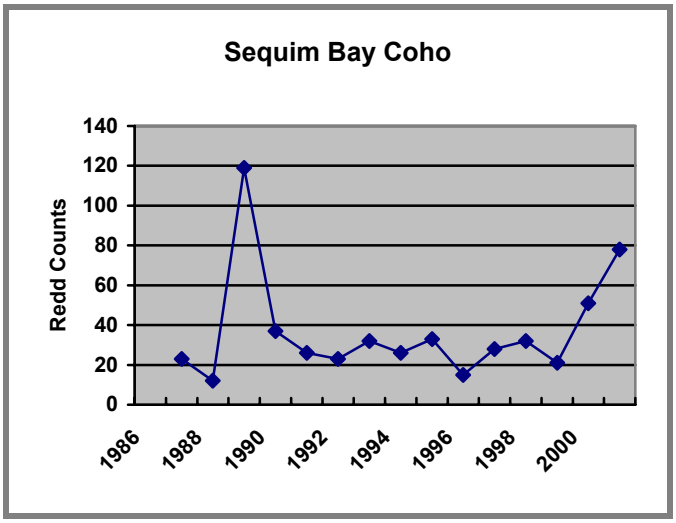
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	REDD COUNTS	TOTAL ESCAPEMENT
1986	No data	
1987	23	
1988	12	
1989	119	
1990	37	
1991	26	
1992	23	
1993	32	
1994	26	
1995	33	
1996	15	
1997	28	
1998	32	269
1999	21	358
2000	51	358
2001	78	



Data are 1) cumulative redd counts in the JimmyComeLately Creek index area from RM 0.0 to 1.5; and 2) total escapement estimates based on redd counts and using a stratified random survey methodology (Crain 1999).

Redd counts have been relatively stable since 1992. The stock status rating remains **Depressed** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Sequim Bay coho were identified as a stock based on their distinct spawning ground distribution.

SPAWNING DISTRIBUTION: Spawning takes place in accessible portions of JimmyComeLately, Johnson and Dean creeks.

SPAWNING TIMING: Spawning generally occurs from late October to early January.

GENETIC ANALYSIS: No genetic analysis has been done on Sequim Bay coho.

STRAIT OF JUAN DE FUCA - SEQUIM BAY COHO

Stock Origin

This is a **mixed** stock with **wild** production. This area received substantial off-station yearling releases, primarily of Dungeness Hatchery stock between 1952 and 1971. Other yearling plants came from the Soos Creek (Green River) and Marblemount (Skagit River) hatcheries. This stock is likely a mixture of the native stock and non-native stocks introduced into these streams.

STRAIT OF JUAN DE FUCA - DUNGENESS COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Dungeness coho, so their status is **Unknown** in 2002. The 1992 rating of Depressed was based on an escapement estimate indicator derived from other Strait of Juan de Fuca tributaries that were expanded to a Strait total estimate then partitioned out to individual population aggregates based on individual watershed areas. The Strait total estimates, derived from surveys in small independent tributaries, may not reflect conditions in the Dungeness River. The Dungeness has a much larger flow volume and different annual flow regime from most other eastern Strait tributaries because of its hydrologic connection to runoff from snowfields in the Olympic Mountains.

There are limited recent-year estimates of smolt production for some streams in the Dungeness area. They suggest significant natural production in the Dungeness River watershed and very limited smolt production in two other tributaries in the stock unit.

Stock Definition

Dungeness coho were identified as a stock based on their distinct spawning distribution. Stock identification is supported by recent genetic analysis.

Spawning Distribution: Most spawning takes place in accessible portions of the Dungeness and Gray Wolf rivers and their tributaries. Spawning also occurs in Bell and Cassalery creeks, independent tributaries near the Dungeness.

Spawning Timing: Spawning generally occurs from November to early January.

Genetic Analysis: Allozyme analysis of a collection of Dungeness Hatchery coho made in 1987 shows that this stock is significantly different from all other Washington coho stocks examined (David Teel, NMFS, personal communication).

Stock Origin

This is a **mixed** stock with **composite** production. Streams in this area have been heavily planted with non-native coho. Annual off-station yearling releases occurred between 1952 and 1981 using Soos Creek (Green River), Kendall Creek (Nooksack River), Toutle, Elwha and Puyallup hatchery stocks. This stock is likely a mixture of the native stock and the introduced non-native stocks.

STRAIT OF JUAN DE FUCA - MORSE CREEK COHO

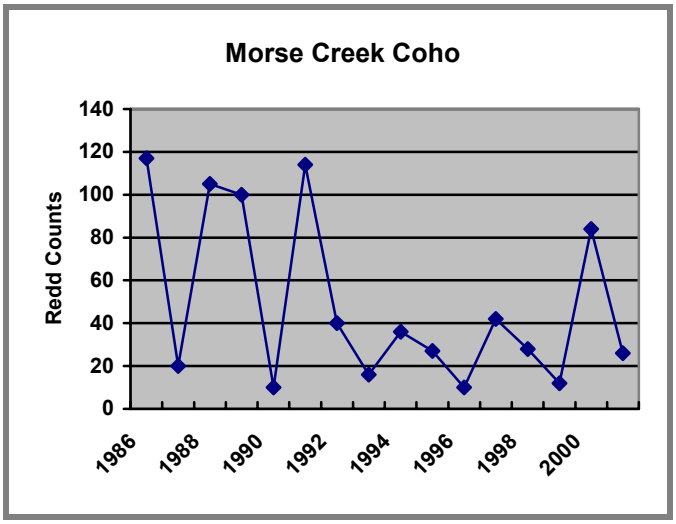
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	REDD COUNTS	TOTAL ESCAPEMENT	TOTAL SMOLTS
1986	117		
1987	20		
1988	105		
1989	100		
1990	10		
1991	114		
1992	40		
1993	16		
1994	36		
1995	27		
1996	10		1,333
1997	42		2,178
1998	28	488	1,484
1999	12	101	
2000	84	608	
2001	26		



Data are 1) cumulative redd counts in index areas in McDonald Creek (RM 1.7 to 4.4) and Siebert Creek (RM 0.9 to 4.2); and 2) total escapements based on redd counts and using a stratified random survey methodology (Crain 1999) and 3) smolt counts based on smolt trapping data in Siebert, Ennis and Tumwater creeks beginning with the 1996 brood year.

Recent redd counts are low, and smolt production has also been poor in the sampled tributaries. A **Depressed** stock status rating is appropriate again in 2002 because of **chronically low** redd counts.

STOCK DEFINITION

Morse Creek coho were identified as a stock based on their distinct spawning distribution and on their probable common hatchery influence (mainly Dungeness Hatchery).

SPAWNING DISTRIBUTION: Most spawning takes place in McDonald, Siebert, Morse, Ennis, Valley and Tumwater creeks.

SPAWNING TIMING: Spawning generally occurs from November to early January.

GENETIC ANALYSIS: No genetic analysis has been done on Morse Creek coho.

STRAIT OF JUAN DE FUCA - MORSE CREEK COHO

Stock Origin

This is a **mixed** stock with **wild** production. Streams in this area have been heavily planted with non-native coho. Hatchery yearlings were periodically released between 1952 and 1981, with the most consistent plants being made in Morse, McDonald and Siebert creeks using Dungeness, Soos Creek (Green River), Toutle and Minter Creek (south Puget Sound) hatchery stocks. Extended-reared coho, from a net pen program begun in 1981 in the Port Angeles harbor, may also contribute to spawning in Morse, McDonald and Siebert creeks. This stock is likely a mixture of the native stock and the introduced non-native stocks.

STRAIT OF JUAN DE FUCA - ELWHA COHO

STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	**Unknown**

STOCK STATUS RATING DATA

There are no abundance trend data for Elwha coho, so their status is **Unknown** in 2002. The 1992 rating of Healthy was based on an escapement estimate indicator derived from other Strait of Juan de Fuca tributaries that were expanded to a Strait total estimate then partitioned out to individual population aggregates based on individual watershed areas. The Strait total estimates, derived from surveys in small independent tributaries, may not reflect conditions in the Elwha River. The Elwha has a much larger flow volume and different annual flow regime the most other eastern Strait tributaries resulting from its hydrologic connection to runoff from snowfields in the Olympic Mountains. These differences are compounded by the presence of two large dams on the mainstem Elwha.

STOCK DEFINITION

Elwha coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning is confined to the lower 4.9 miles of the Elwha, below the Elwha Dam.

SPAWNING TIMING: Spawning generally occurs from November to early January.

GENETIC ANALYSIS: No genetic analysis has been done on this stock.

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Streams in this area have been heavily planted with non-native coho. Releases include Elwha, Dungeness and Soos Creek (Green River) hatchery stocks. Homing of returning adults back to the Elwha Hatchery rack is limited, and many hatchery-origin fish spawn in the river. In addition, there is no attempt or ability to differentiate between natural- and hatchery-origin coho during the hatchery broodstocking activities, hence the composite nature of the stock.

STRAIT OF JUAN DE FUCA - SALT CREEK COHO

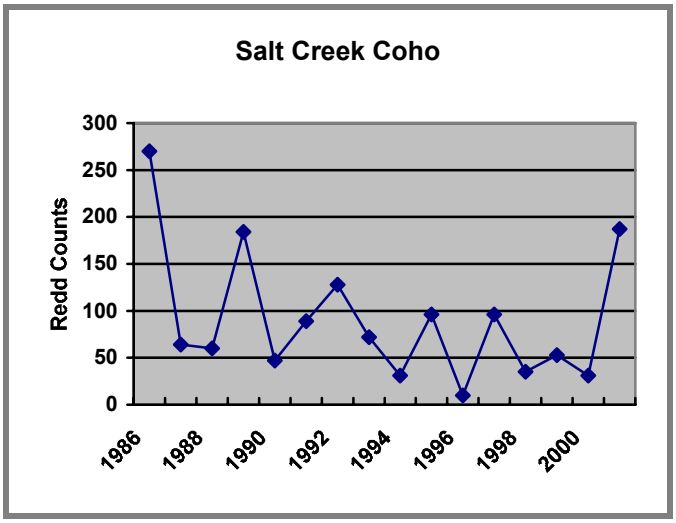
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	REDD COUNTS	TOTAL SMOLTS
1986	270	
1987	64	
1988	60	
1989	184	
1990	47	
1991	89	
1992	128	
1993	72	
1994	31	
1995	96	
1996	10	7,357
1997	96	10,711
1998	35	26,652
1999	53	
2000	31	
2001	187	



Data are 1): cumulative redd counts in index areas in the mainstem Salt Creek (RM 5.6 to 6.4) and an unnamed tributary (WRIA 19.0014) (RM 0.0 to 0.8); and 2) total smolt estimates based on smolt trapping in Salt Creek beginning with the 1996 brood year. Redd counts have declined since the 1992 SASSI status rating. However, recent-year Salt Creek smolt production estimates show adequate production for the basin, so escapement levels appear to be adequate for significant juvenile production. Smolts estimates beginning with the 1996 brood year are: 1996 brood year = 7,357 smolts, 1997 brood year = 10,711 smolts, 1998 brood year = 26,652 smolts. In addition, the preliminary 2001 index cumulative redd count was 187, the highest since 1992.

Stock status is rated **Healthy** in 2002, based largely on the recent juvenile production information.

STOCK DEFINITION

Salt Creek coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Salt Creek system.

SPAWNING TIMING: Spawning generally occurs from early November to mid-January.

STRAIT OF JUAN DE FUCA - SALT CREEK COHO

GENETIC ANALYSIS: No genetic analysis has been done on Salt Creek coho.

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were off-station releases of Dungeness coho yearlings in this area almost annually between 1959 and 1974. Single releases of Soos Creek (Green River), Marblemount (Skagit River), Elwha, George Adams (Hood Canal) and Washougal hatchery stocks have also occurred. This stock is likely a mixture of the native stock and the introduced non-native stocks.

STRAIT OF JUAN DE FUCA - LYRE COHO

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Lyre coho, so their status remains **Unknown** in 2002.

Stock Definition

Lyre coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the lower mainstem Lyre and in Susie Creek.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: No genetic analysis has been done on Lyre coho.

Stock Origin

This is a **mixed** stock with **wild** production. There were off-station releases of non-native coho in almost every year between 1954 and 1971. Dungeness Hatchery stock was most commonly used along with single releases of Soos Creek (Green River) and Marblemount (Skagit River) hatchery stocks. This stock is likely a mixture of the native and introduced non-native stocks.

STRAIT OF JUAN DE FUCA - PYSHT/TWIN/DEEP CREEK COHO

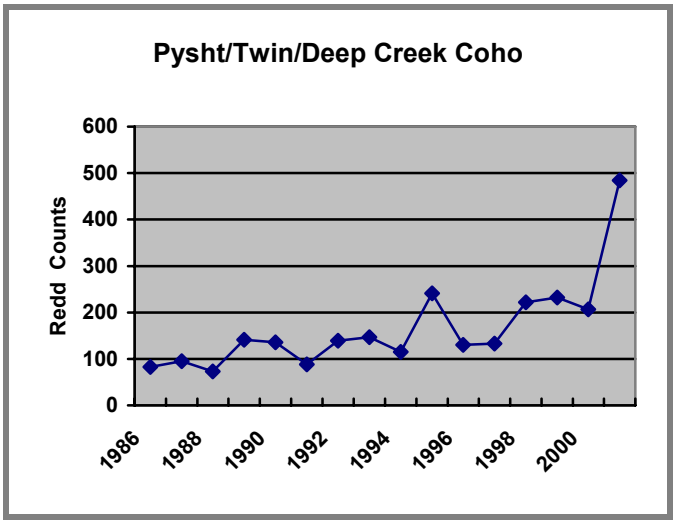
Stock Status

1992 Status	2002 Status
Depressed	Healthy

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Brood Year	Redd Counts	Total Escapement	Total Smolts
1986	83		
1987	95		
1988	73		
1989	141		
1990	136		
1991	88		
1992	139		
1993	147		
1994	115		
1995	241		
1996	130		4.022
1997	133		4,678
1998	222	4,307	
1999	232	4,002	
2000	207	5,834	
2001	484		



Data are 1) cumulative redd counts from index areas in Sadie Creek (RM 1.6 to 2.2), an East Twin River tributary, and in the South Fork Pysht (RM 5.7 to 7.2) and Green Creek (RM 1.0 to 2.2); 2) total escapement estimates based on redd counts and using a stratified random survey methodology; and 3) total smolt production based on smolt trapping in Deep Creek beginning in brood year 1996.

All redd counts since 1991 have met or exceeded values observed prior to 1992, with much higher index escapements observed in 1995 and from 1998 to 2000. Smolt production in Deep Creek has been robust. Consequently stock status has been upgraded to **Healthy** in 2002.

Stock Definition

Pysht/East and West Twin/Deep Creek coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the East Twin River, including Sadie Creek, the West Twin River, Deep Creek, the East Fork Deep Creek, the mainstem Pysht River, South Fork Pysht and Green Creek.

Spawning Timing: Spawning generally occurs from November to mid-January.

STRAIT OF JUAN DE FUCA - PYSHT/TWIN/DEEP CREEK COHO

GENETIC ANALYSIS: No genetic analysis has been done on Pysht/East and West Twin/Deep Creek coho.

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were off-station releases of coho yearlings in this area almost annually between 1954 and 1971. Dungeness stock was most commonly used with additional releases from Sol Duc, Soos Creek (Green River), Marblemount (Skagit River) and George Adams (Hood Canal) hatchery stocks. The stock is likely a mixture of the native stock and introduced non-native stocks.

STRAIT OF JUAN DE FUCA - CLALLAM COHO

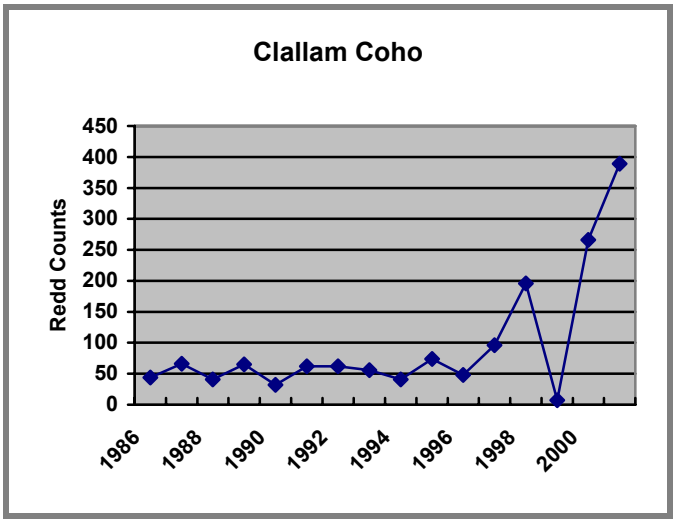
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	REDD COUNTS	TOTAL ESCAPEMENT
1986	44	
1987	66	
1988	41	
1989	65	
1990	32	
1991	62	
1992	62	
1993	56	
1994	41	
1995	74	
1996	48	
1997	96	
1998	196	3,664
1999	7	393
2000	266	3,827
2001	389	



Data are 1): cumulative redd counts from the index area in Charley Creek (RM 0.9 to 1.5); and 2) total escapement estimates based on redd counts and using a stratified random survey methodology (Crain 1999).

In 1992 stock status was rated as unknown due to uncertainty about how representative the Charlie Creek index area is for determining total natural coho spawning activity in the Clallam River basin. There was a considerable increase in the annual redd counts in 1998 and 2000 from the historical values, and it is now apparent that the index data are representative of escapement trends in the entire Clallam River basin. Given the upward trend and the robust estimates of total escapement, this stock is rated **Healthy** in 2002.

STOCK DEFINITION

Clallam coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Clallam system.

SPAWNING TIMING: Spawning generally occurs from early November to mid-January.

STRAIT OF JUAN DE FUCA - CLALLAM COHO

GENETIC ANALYSIS: No genetic analysis has been done on Clallam coho.

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were off-station releases of coho yearlings in this area almost annually between 1958 and 1975. Dungeness Hatchery stock was most commonly used with additional releases from Sol Duc, Soos Creek (Green River), Washougal, Elwha and George Adams (Hood Canal) hatchery stocks. There have been on-station yearling releases into this drainage by a local enhancement cooperative since 1980. The stock is likely a mixture of the native stock and introduced non-native stocks.

STRAIT OF JUAN DE FUCA - HOKO COHO

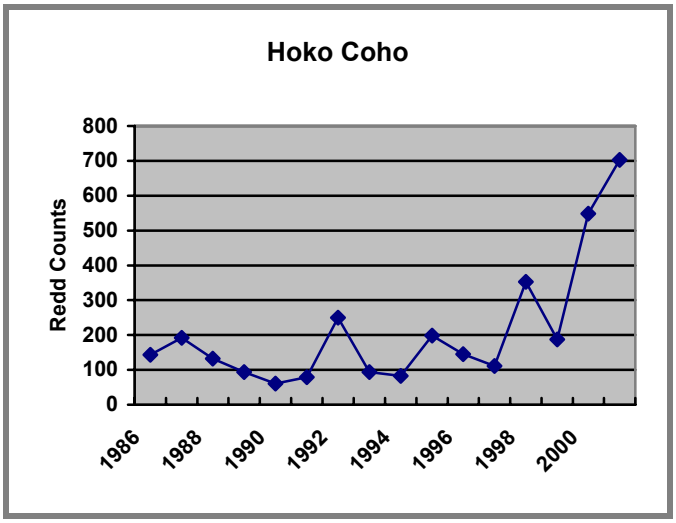
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	REDD COUNTS	TOTAL ESCAPEMENT	TOTAL SMOLTS
1986	143		
1987	192		
1988	132		
1989	94		
1990	61		
1991	79		
1992	250		
1993	94		
1994	83		
1995	198		
1996	145		3,695
1997	111		4,313
1998	353	4,299	
1999	187	1,706	
2000	548	4,808	
2001	703		



Data are: 1)cumulative redd counts in index areas in the Hoko River (RM 20.4 to 22.5), Bear Creek (RM 0.0 to 0.7) and Cub Creek (RM 0.0 to 0.5); 2) total escapement estimates based on redd counts and using a stratified random survey methodology (Crain 1999); and 3) total smolt production based on smolt trapping in the Little Hoko River beginning in brood year 1996.

Given that redd counts increased considerably from 1998 to 2000 compared to counts in the late 1980s and early 1990s, the stock is again rated **Healthy** in 2002.

STOCK DEFINITION

Hoko coho were identified as a stock based on their distinct spawning distribution. Stock identification has been supported by genetic analysis.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Hoko system.

SPAWNING TIMING: Spawning generally occurs from early November to mid-January.

STRAIT OF JUAN DE FUCA - HOKO COHO

GENETIC ANALYSIS: Allozyme analysis of a collection made in 1987 shows that Hoko coho are significantly different from all other Washington coho stocks examined (David Teel, NMFS, personal communication).

STOCK ORIGIN

This is a **mixed** stock with **wild** production. There were off-station releases of non-native coho yearlings in this area occasionally between 1954 and 1972. Dungeness Hatchery stock was most commonly used with additional releases from Sol Duc, Soos Creek (Green River), Elwha and George Adams (Hood Canal) hatchery stocks. The stock is likely a mixture of the native stock and introduced non-native stocks.

STRAIT OF JUAN DE FUCA – SEKIU/SAIL COHO

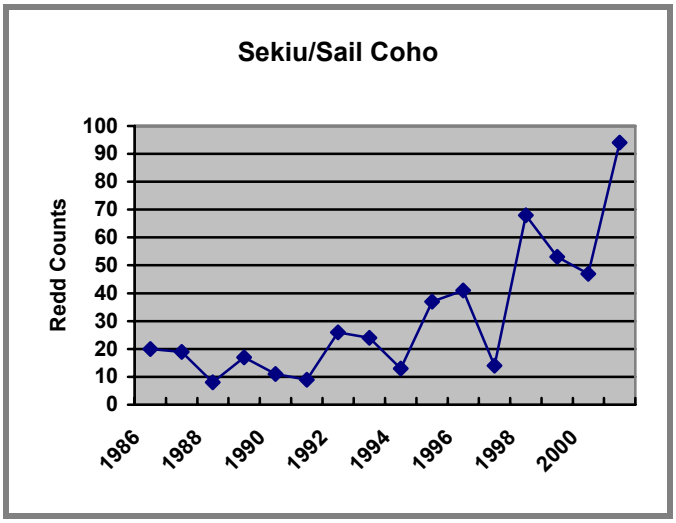
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

BROOD YEAR	REDD COUNTS	TOTAL ESCAPEMENT
1986	20	
1987	19	
1988	8	
1989	17	
1990	11	
1991	9	
1992	26	
1993	24	
1994	13	
1995	37	
1996	41	
1997	14	
1998	68	1,173
1999	53	388
2000	47	912
2001	94	



Data are: 1) cumulative redd counts from index areas in Carpenter Creek (RM 0.0 to 0.6) and East Fork Carpenter Creek (RM 0.0 to 0.5); and 2) total escapement estimates based on redd counts and using a stratified random survey methodology (Jacobs and Cooney 1992).

Since 1991, there has been a considerable increase in annual redd counts between the 1980s and 1990s, so stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Sekiu/Sail coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Sekiu and Sail systems.

SPAWNING TIMING: Spawning generally occurs from early November to early January.

GENETIC ANALYSIS: No genetic analysis has been done on Sekiu/Sail coho.

STRAIT OF JUAN DE FUCA – SEKIU/SAIL COHO

Stock Origin

This is a **mixed** stock with **wild** production. There have been very few off-station releases of coho into the Sekiu drainage. The Sail River, Agency and Village creeks had USFWS Makah National Fish Hatchery Sooes/Quinault/Quilicene-origin coho fry releases from 1984 through 1988. Other plantings of Dungeness, Sol Duc, Elwha and George Adams (Hood Canal) hatchery stocks have occurred. This stock is likely a mixture of native and introduced non-native stocks.

STRAIT OF JUAN DE FUCA – UPPER DUNGENESS PINK

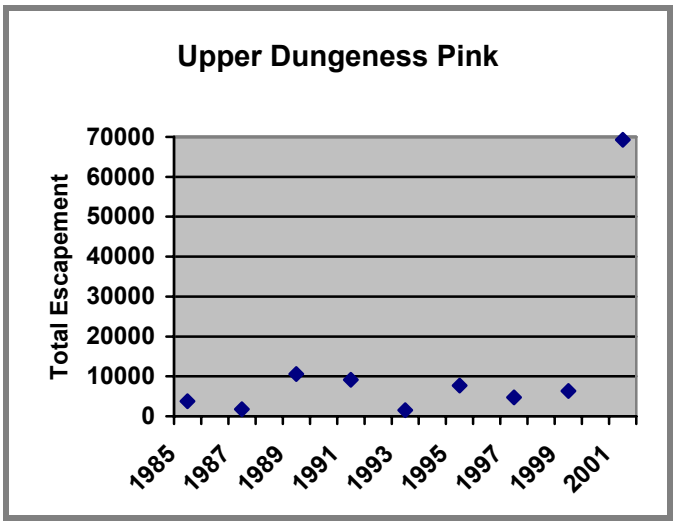
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1985	3,764
1986	
1987	1,768
1988	
1989	10,579
1990	
1991	9,132
1992	
1993	1,556
1994	
1995	7,737
1996	
1997	4,730
1998	
1999	6,350
2000	
2001	69,272



Data are total escapement estimates based on counts of live plus dead spawners in the mainstem Dungeness (RM 0.0 to 18.7), Gold Creek (RM 0.0 to 0.3) and Gray Wolf River (RM 0.0 to 0.3).

The escapements of Upper Dungeness pinks declined abruptly in 1981 and have remained low in subsequent years. Prior to 1981, escapements were usually in excess of 20,000 spawners. Favorable freshwater conditions during the winter of 1999-2000 and excellent marine conditions produced the largest return of Upper Dungeness pinks since the 1960s. The year 2001 notwithstanding, stock status is rated **Depressed** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Upper Dungeness pinks were identified as a stock based on their distinct spawning distribution, early river entry timing (beginning in late July) and spawning timing and ocean-bright coloration when they enter freshwater.

SPAWNING DISTRIBUTION: Most spawning takes place in the upper mainstem (above RM 9.2), in lower Gold Creek and in the lower Gray Wolf River (RM 0.0 to 6.0)

STRAIT OF JUAN DE FUCA – UPPER DUNGENESS PINK

Spawning Timing: Spawning occurs from August to mid-September.

Genetic Analysis: Allozyme analysis has shown that Upper Dungeness pinks are genetically distinct from all Washington pink stocks examined.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA– LOWER DUNGENESS PINK

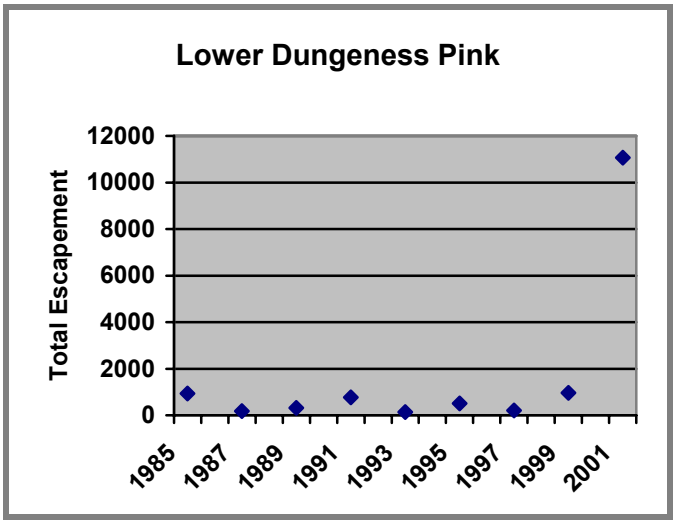
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Critical

STOCK STATUS RATING DATA

DATA QUALITY:

YEAR	TOTAL ESCAPEMENT
1985	966
1986	
1987	138
1988	
1989	323
1990	
1991	763
1992	
1993	139
1994	
1995	515
1996	
1997	205
1998	
1999	956
2000	
2001	11,072



Data are total escapement estimates based on counts of live plus dead spawners on the mainstem Dungeness (RM 0.0 –18.7), in Gold Creek (RM 0.0 to 0.3) and the Gray Wolf River (RM 0.0 to 2.5).

Lower Dungeness pink escapements declined abruptly in 1981 and have remained low in subsequent years. Pre-decline escapements usually exceeded 10,000 spawners. Favorable freshwater conditions during the winter of 1999-2000 and excellent marine conditions produced the largest return of Lower Dungeness pinks since the 1960s. The year 2001 notwithstanding, stock status is rated **Critical** in 2002 due to **chronically low** escapements.

STOCK DEFINITION

Lower Dungeness pinks were identified as a stock based on their distinct spawning distribution, and later return and spawning timing.

SPAWNING DISTRIBUTION: Spawning takes place in the lower six miles of the Dungeness River.

SPAWNING TIMING: Spawning occurs from mid-September to late October

STRAIT OF JUAN DE FUCA– LOWER DUNGENESS PINK

GENETIC ANALYSIS: Allozyme analysis has shown that Lower Dungeness pinks are genetically distinct from all other Washington pink stocks examined.

STOCK ORIGIN

This is a **native** stock with **composite** production. A supplementation program to rebuild stock numbers is underway at the WDFW Dungeness Hatchery.

STRAIT OF JUAN DE FUCA– ELWHA PINK

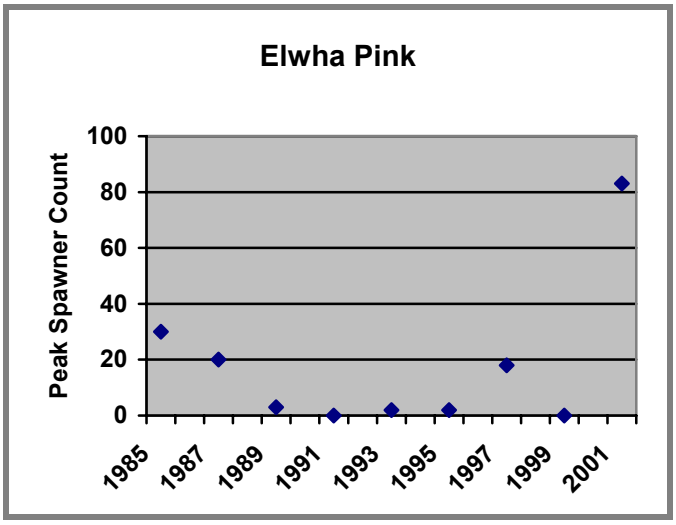
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR STOCK STATUS RATING: Poor

YEAR	PEAK SPAWNER COUNT
1985	30
1986	
1987	20
1988	
1989	3
1990	
1991	0
1992	
1993	2
1994	
1995	2
1996	
1997	18
1998	
1999	0
2000	
2001	83



Data are peak spawner counts made during chinook surveys. In the early 1970s instantaneous counts of over a thousand pinks were made, however since 1981 not more than 30 pinks have been seen on any one day. Numbers of spawners from 1989 to 1999 averaged only six. These numbers are so low that they may not represent a self-sustaining stock but may be strays from other stocks. Stock status is rated **Critical** in 2002 based on **chronically low** peak spawner counts.

STOCK DEFINITION

Elwha pinks were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning is confined to the lower 4.9 miles of the Elwha River, below the Elwha Dam.

SPAWNING TIMING: Spawning occurs from September through October.

GENETIC ANALYSIS: No genetic analysis has been done on Elwha pinks.

STRAIT OF JUAN DE FUCA– ELWHA PINK

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – DUNGENESS SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Dungeness summer steelhead, so their status in 2002 is **Unknown**. Spawning escapement is not monitored. Sport harvest data are available for some years when the fishery was open, but because of low harvest numbers and fisheries closures, sport harvest are not adequate to assess stock status.

Stock Definition

Dungeness summer steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the Dungeness and Gray Wolf rivers.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: No genetic analysis has been done on Dungeness winter steelhead.

Stock Origin

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – ELWHA SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data with which to assess stock status, so status in 2002 is **Unknown**. Spawning escapement is not monitored nor an escapement goal been established.

Stock Definition

Elwha summer steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning is confined to the lower 4.8 miles of the Elwha River below the Elwha Dam.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: No genetic analysis has been done on Elwha summer steelhead.

Stock Origin

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – DISCOVERY BAY WINTER STEELHEAD

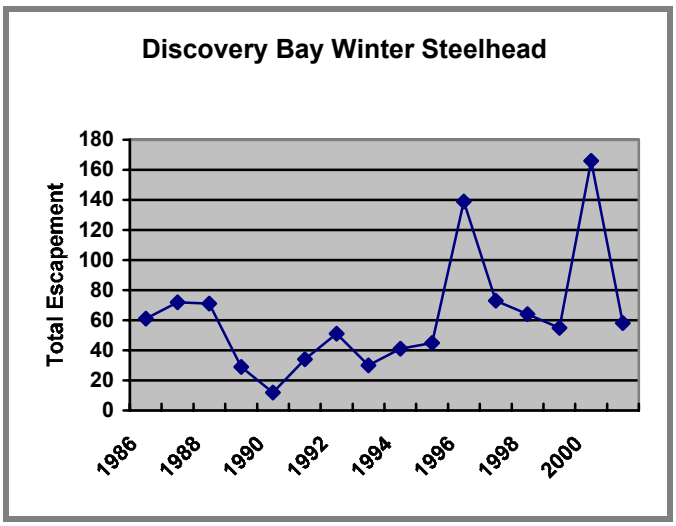
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	61
1987	72
1988	71
1989	29
1990	12
1991	34
1992	51
1993	30
1994	41
1995	45
1996	139
1997	73
1998	64
1999	55
2000	166
2001	58



Data are total escapement estimates based on adults counted in the Snow Creek trap and released upstream and on redd counts downstream from the trap.

This stock is rated **Healthy** due to a consistent increase in escapements.

STOCK DEFINITION

Discovery Bay winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in Snow and Salmon creeks.

SPAWNING TIMING: Spawning generally occurs from early February to mid-May.

GENETIC ANALYSIS: No genetic analysis has been done on Discovery Bay winter steelhead.

STOCK ORIGIN

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – SEQUIM BAY WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Sequim Bay summer steelhead, so their status remains **Unknown** in 2002. Spawning escapement is not monitored.

Stock Definition

Sequim Bay summer steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in JimmyComeLately, Johnson and Gierin creeks.

Spawning Timing: Spawning occurs from mid-February to mid-June.

Genetic Analysis: No genetic analysis has been done on Sequim Bay winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – DUNGENESS WINTER STEELHEAD

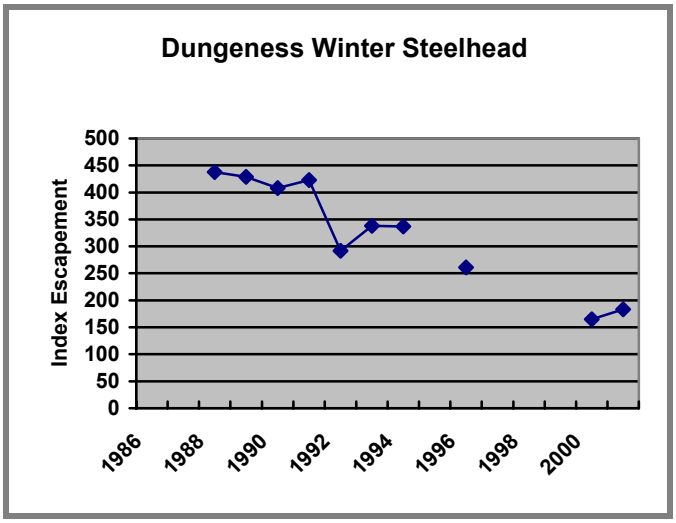
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	INDEX ESCAPEMENT
1988	438
1989	429
1990	408
1991	423
1992	292
1993	338
1994	337
1995	No data
1996	261
1997	No data
1998	No data
1999	No data
2000	165
2001	183



Data are index escapements based on redd counts in index areas. Escapement estimates have not been made on an annual basis since 1995. The Dungeness River can be difficult to survey for steelhead because of high flows, especially in May.

Stock status is rated **Depressed** because of a **long-term negative trend** in wild spawner escapement.

STOCK DEFINITION

Dungeness winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in the upper reaches of the Dungeness and Gray Wolf rivers.

SPAWNING TIMING: Spawning occurs from mid-February to early June.

GENETIC ANALYSIS: No genetic analysis has been done on Dungeness winter steelhead.

STOCK ORIGIN

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – MORSE CREEK/INDEPENDENTS WINTER STEELHEAD

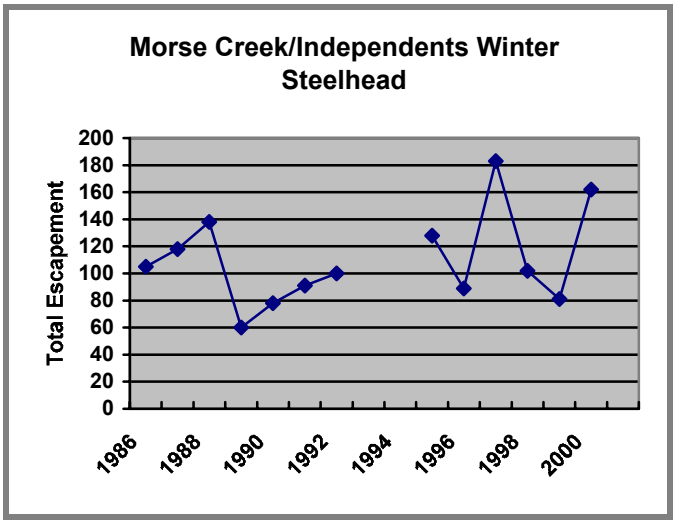
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	105
1987	118
1988	138
1989	60
1990	78
1991	91
1992	100
1993	No data
1994	No data
1995	128
1996	89
1997	183
1998	102
1999	81
2000	162



Data are total escapement estimates based on redd counts in the entire anadromous zone of Morse Creek from RM 0.0 to 4.7. Total escapement estimates based on redd counts in the index areas of McDonald Creek (RM 0.0 to 5.4) have been made for 1998, 1999, 2000 and 2001. The estimates are 306, 217,251 and 143, respectively.

Stock status is rated **Depressed** in 2002 because the average escapement since 1995 has exceeded the Morse Creek multiple sustained harvest (MSH) escapement objective of 120 spawners only four times since 1986. Stock status for McDonald and Siebert creeks cannot be determined at this time.

STOCK DEFINITION

Morse Creek/Independents winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in the Morse, Siebert and McDonald creeks.

SPAWNING TIMING: Spawning occurs from mid-February to early June.

GENETIC ANALYSIS: No genetic analysis has been done on Morse Creek/Independents winter steelhead.

STRAIT OF JUAN DE FUCA – MORSE CREEK/INDEPENDENTS WINTER STEELHEAD

Stock Origin

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – ELWHA WINTER STEELHEAD

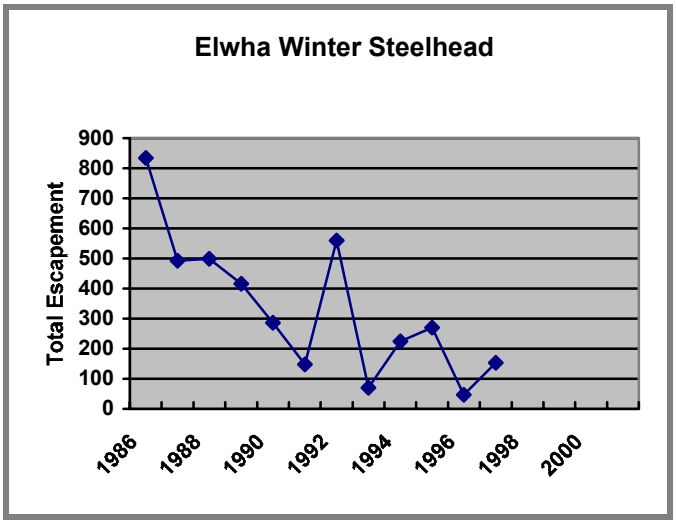
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	834
1987	493
1988	499
1989	416
1990	286
1991	148
1992	560
1993	70
1994	225
1995	270
1996	47
1997	153



Data are total escapement estimates based on hatchery/wild ratios in the commercial harvest and the return to the Elwha Hatchery.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements, compared to historic levels, resulting from the loss of access to the majority of available habitat in the drainage.

STOCK DEFINITION

Elwha winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning is confined to the lower 4.9 miles of the Elwha River, below the Elwha Dam.

SPAWNING TIMING: Spawning occurs from mid-February to mid-June.

GENETIC ANALYSIS: No genetic analysis has been done on Elwha winter steelhead.

STOCK ORIGIN

This stock is a **mixed** stock with **wild** production. This stock has been influenced by hatchery winter steelhead.

STRAIT OF JUAN DE FUCA – SALT CREEK/INDEPENDENTS WINTER STEELHEAD

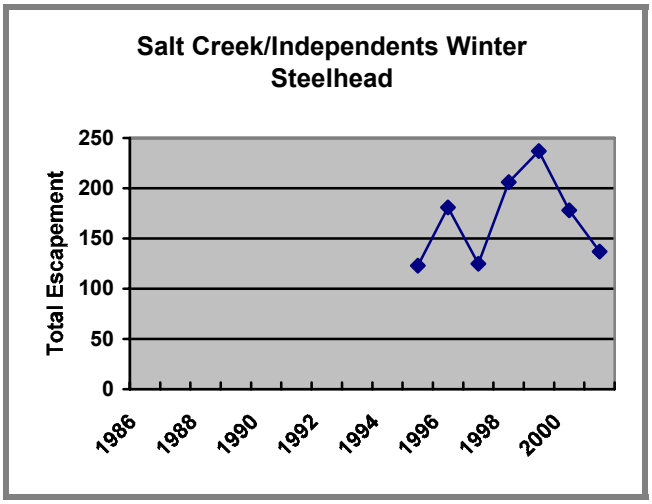
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1995	123
1996	181
1997	125
1998	206
1999	237
2000	178
2001	137



Data are total escapement estimates based on redd counts in index areas in Salt Creek and its tributaries.

Stock status is rated **Healthy** in 2002 because of relatively stable escapement estimates meeting or exceeding the goal of 137 adults in 1996, 1998, 1999, 2000 and 2001.

STOCK DEFINITION

Salt Creek/Independents winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in the Salt, Whiskey, Colville and Field creeks.

SPAWNING TIMING: Spawning occurs from mid-February to mid-June.

GENETIC ANALYSIS: No genetic analysis has been done on Salt Creek/Independents winter steelhead.

STOCK ORIGIN

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – LYRE WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Lyre winter steelhead, so their status remains **Unknown** in 2002. Spawning escapement is not monitored. Sport harvest data are available for some years when the fishery was open, but because of low harvest numbers and fisheries closures, sport harvest are not adequate to assess stock status.

Stock Definition

Lyre winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the Lyre River and its tributaries.

Spawning Timing: Spawning occurs from mid-February to mid-June.

Genetic Analysis: No genetic analysis has been done on Lyre winter steelhead.

Stock Origin

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – PYSHT/INDEPENDENTS WINTER STEELHEAD

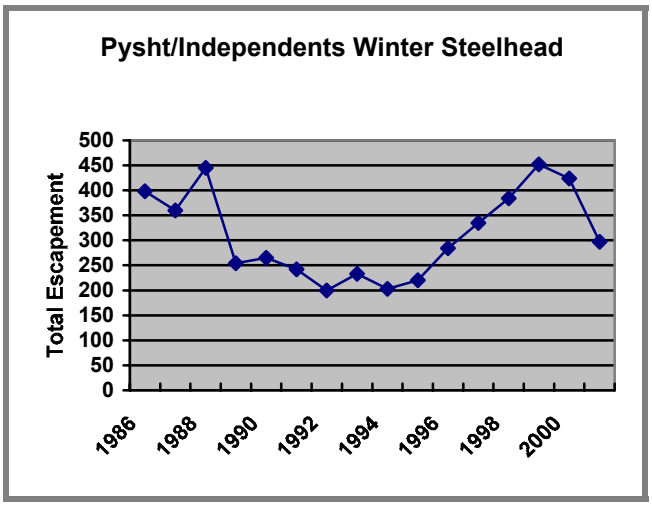
Stock Status

1992 Status	2002 Status
Healthy	Healthy

Stock Status Rating Data

Usefulness for rating stock status: Fair

Year	Total Escapement
1986	398
1987	360
1988	445
1989	254
1990	265
1991	242
1992	200
1993	233
1994	203
1995	220
1996	284
1997	335
1998	384
1999	452
2000	424
2001	297



Data are total escapement estimate based on redd counts in index areas of the Pysht and South Fork Pysht rivers. Total escapement estimates based on redd counts in index areas of the East Twin River, West Twin River and Deep Creek have been made since 1995.

Stock status is rated **Healthy** in 2002 because of a consistent increase in escapement with escapement estimates meeting or exceeding the goal of 200 adults in every year since 1986. Total escapement in the East Twin exceeded the escapement goal of 86 adults twice since 1995. In the West Twin, total escapement has exceeded the goal of 103 adults five times since 1995, and in Deep Creek, total escapement has exceeded the goal of 104 adults in every year since 1995.

Stock Definition

Pysht/Independents winter steelhead were identified as a stock based on their distinct spawning distribution.

STRAIT OF JUAN DE FUCA – PYSHT/INDEPENDENTS WINTER STEELHEAD

Spawning Distribution: Spawning takes place in the Pysht River, Deep Creek, West Twin and East Twin rivers.

Spawning Timing: Spawning occurs from mid-February to mid-June.

Genetic Analysis: No genetic analysis has been done on Pysht/Independents winter steelhead.

Stock Origin

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – CLALLAM WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

Spawning escapement data have been collected since 1999 but are not yet sufficient to determine stock status. Escapement estimates are based on redd counts in index areas of the mainstem Clallam River. Index estimates for 1999, 2000 and 2001 are 199, 284 and 224, respectively. The index escapement goal is 159 spawners.

Stock Definition

Clallam winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the mainstem Clallam River and in tributaries such as Pearson, Last, Charley and Blowder creeks.

Spawning Timing: Spawning occurs from mid-February to mid-June.

Genetic Analysis: No genetic analysis has been done on Clallam winter steelhead.

Stock Origin

Stock origin and production type are **unresolved** by the state and tribes.

STRAIT OF JUAN DE FUCA – HOKO WINTER STEELHEAD

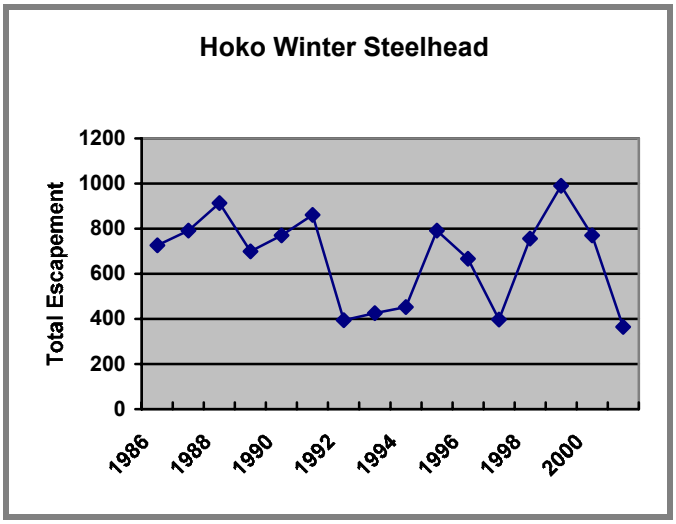
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	726
1987	792
1988	913
1989	699
1990	770
1991	861
1992	394
1993	425
1994	453
1995	792
1996	667
1997	397
1998	756
1999	990
2000	770
2001	365



Data are total escapement estimates are based on redd counts in index areas in the mainstem Hoko and Little Hoko rivers and their tributaries.

Stock status is rated **Healthy** in 2002 because escapement estimates have exceeded the escapement goal of 400 adults in every year since 1986 except 1992, 1997 and 2001. The escapement goal probably was met in 1997 and may have been met in 2001. High flows prevented completion of surveys in 1997, and escapement estimates have not been available for upper Hoko River tributaries since 1998.

STOCK DEFINITION

Hoko winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in the Hoko and Little Hoko rivers and their tributaries.

SPAWNING TIMING: Spawning occurs from mid-February to mid-June.

GENETIC ANALYSIS: No genetic analysis has been done on Hoko winter steelhead.

STRAIT OF JUAN DE FUCA – HOKO WINTER STEELHEAD

Stock Origin

This stock is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – SEKIU WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data Sekiu winter steelhead, so their status remains **Unknown** in 2002.

Stock Definition

Sekiu winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the Sekiu River and its tributaries.

Spawning Timing: Spawning occurs from mid-February to mid-June.

Genetic Analysis: No genetic analysis has been done on Sekiu winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.

STRAIT OF JUAN DE FUCA – SAIL WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Sail winter steelhead, so their status remains **Unknown** in 2002.

Stock Definition

Sail winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the Sail River.

Spawning Timing: Spawning occurs from mid-February to mid-June.

Genetic Analysis: No genetic analysis has been done on Sail winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.